

WE CLAIM:

1. A method of simulating a cold start automobile emissions test, comprising the steps of:

5 preconditioning an automobile, the automobile including an emissions system, the emissions system including an engine and at least one catalytic converter;

injecting a first gaseous substance into the emissions system between the engine and each of the catalytic converters;

10 injecting the first gaseous substance into the emissions system after each of the catalytic converters;

starting the automobile; and

injecting a second gaseous substance into the emissions system.

15

2. The method of Claim 1, wherein the preconditioning step comprises the following steps:

starting the automobile;

operating the automobile until the temperature of the automobile

20 has reached a predetermined temperature and a predetermined level of emissions has been achieved; and

turning the automobile off.

3. The method of Claim 1, wherein the second gaseous substance  
25 is injected into the emissions system after each of the catalytic converters.

4. The method of Claim 1, wherein a greater proportion of the first gaseous substance is injected after each of the catalytic converters than is injected between the engine and each of the catalytic converters.

30

5. The method of Claim 2, wherein the first gaseous substance is heated to a temperature not greater than the predetermined temperature.

6. The method of Claim 1, wherein the emissions system further includes at least one muffler; and further comprising the step of:  
injecting the first gaseous substance into the emissions system between each of the catalytic converters and each of the mufflers.

7. The method of Claim 1, wherein the first gaseous substance comprises pure air.

8. The method of Claim 1, wherein the second gaseous substance comprises hydrocarbons and carbon monoxide.

9. A method of simulating a hot start automobile emissions test, comprising the steps of:  
preconditioning an automobile, the automobile including an emissions system, the emissions system including an engine and at least one catalytic converter;  
injecting a first gaseous substance into the emissions system between the engine and each of the catalytic converters;  
injecting the first gaseous substance into the emissions system after each of the catalytic converters;  
starting the automobile;  
injecting a second gaseous substance into the emissions system; and  
injecting a third gaseous substance into the emissions system.

10. The method of Claim 9, wherein the preconditioning step comprises the following steps:

starting the automobile;

5 operating the automobile until the temperature of the automobile has reached a predetermined temperature and a predetermined level of emissions has been achieved; and

turning the automobile off.

10 11. The method of Claim 9, wherein the second gaseous substance is injected into the emissions system after each of the catalytic converters.

12. The method of Claim 9, wherein the third gaseous substance is injected into the emissions system after each of the catalytic converters.

15 13. The method of Claim 9, wherein a greater proportion of the first gaseous substance is injected after each of the catalytic converters than is injected between the engine and each of the catalytic converters.

20 14. The method of Claim 10, wherein the first gaseous substance is heated to a temperature not greater than the predetermined temperature.

15. The method of Claim 9, wherein the emissions system further includes at least one muffler; and further comprising the step of:

25 injecting the first gaseous substance into the emissions system between each of the catalytic converters and each of the mufflers.

16. The method of Claim 9, wherein the first gaseous substance comprises pure air.

30

17. The method of Claim 9, wherein the second gaseous substance comprises a hydrocarbons and carbon monoxide.

5 18. The method of Claim 9, wherein the third gaseous substance comprises hydrocarbons and carbon monoxide.

10 19. The method of Claim 18, wherein the third gaseous substance contains less comprises a lower concentration of hydrocarbons and carbon monoxide than the second gaseous substance.

20. A system for simulating a cold start automobile emissions test, comprising:

15 preconditioning means that preconditions an automobile, the automobile including an emissions system, the emissions system including an engine and at least one catalytic converter;

first injecting means that injects a first gaseous substance into the emissions system between the engine and each of the catalytic converters;

20 second injecting means that injects the first gaseous substance into the emissions system after each of the catalytic converters;

starting means that starts the automobile; and

third injecting means that injects a second gaseous substance into the emissions system.

25

21. The system of Claim 20, wherein the preconditioning step comprises:

starting means that starts the automobile;

5 operating means that operates the automobile until the temperature of the automobile has reached a predetermined temperature and a predetermined level of emissions has been achieved; and

ending means that turns the automobile off.

10 22. A system for simulating a hot start automobile emissions test, comprising:

preconditioning means that preconditions an automobile, the automobile including an emissions system, the emissions system including an engine and at least one catalytic converter;

15 first injecting means that injects a first gaseous substance into the emissions system between the engine and each of the catalytic converters;

second injecting means that injects the first gaseous substance into the emissions system after each of the catalytic converters;

20 starting means that starts the automobile;

third injecting means that injects a second gaseous substance into the emissions system; and

fourth injecting means that injects a third gaseous substance into the emissions system.

25

5

operating means that operates the automobile until the

ending means that turns the automobile off.